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## THE GREAT CHANGE; QUANTITATIVE APPROACHES TO THE TRANSFORMATION OF EUROPEAN SOCIETY

Konrad H. Jarausch(+)

In the last half-decade the dialogue among quantitative historians has acquired an international dimension. Initial efforts at the International Congress of Historical Sciences in Moscow (1970) and at meetings of specialists in economic history finally led to the foundation of an International Commission for the Application of Quantitative Methods in History at Bucharest (1980). Its first international conference at Washington (1982) demonstrated not only the impressive growth of quantitative scholarship in the major Western, Eastern European and developing countries. But it also revealed, somewhat more surprisingly, a sense of self-doubt among quantifiers.<sup>(1)</sup> Given the revival of narrative, the ideological resistance of "people's history" and the rise of anthropological interests, quantitative methods seemed no longer at the cutting edge of the discipline. Moreover the results of quantitative research tended to reach only a subgroup of scholars, sophisticated enough to appreciate the technical problems involved, while the majority of practicing historians ignored them and continued pretty much as before. Hence the International Commission convened a new meeting among quantifiers as well as anthropological historians, substantively interested in the "great change" of European society in the last two centuries, in order to continue the internal as well as the external discussion.<sup>(2)</sup>

Although quantitative research designs are growing in sophistication, their findings have, with a few exceptions, rarely found their way into general historical understanding. Recent surveys indicate that the quantity as well as the quality of quantitative work continues to increase.<sup>(3)</sup> Nevertheless, several obstacles keep the insights of quantitative historians from being fully appreciated: First, quantitative work tends to follow the same national divisions as traditional historical writing, and national styles of quantitative history inhibit the transfer of methods and hypotheses across frontiers.<sup>(4)</sup> Second, there is no agreement among practicing quantifiers about the methodological basis of their work. While some like R. Fogel demand a "scientific history" of statistical modelling, others like D. Herlihy are only willing to assign quantification the status of a subordinate research tool among many.<sup>(5)</sup> Third, quantitative historians are just as segmented as their colleagues into subspecialties with their own methodologies, using the developments outside their own particular interest as explanatory residuals. The "new political history" has therefore little to say to "econometrics" which in turn ignores the "new social history" and so on.<sup>(6)</sup>

To overcome these obstacles, it seemed fruitful to address a common topic such as the transformation of European society from the eighteenth century on in a transnational, methodologically open and multidimensional fashion. The limitations of global theorizing such as "modernization" constructs or "class struggle" explanations dictated an inductive approach to the "great

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change" starting with specific research discussions.(7) Similarly, Germanic handbooks, though impressive compendia of facts, tend to treat problems as if they had already been resolved while they are still being hotly debated.(8) Not much better are American surveys which try to present cross-national interrelationships, since they do not probe deeply enough into the causes and patterns of change.(9) Perhaps the best that one can hope for are individual syntheses, which, however, provide somewhat idiosyncratic interpretations and stimulate through dissent as much as through approval.(10) Instead of debating these problematic general theses, it appeared more promising to discuss four areas of particularly innovative quantitative research and rigorously to relate them to each other in order to get at the broad pattern of "the great change."

Since Marxist and Liberal historians agree on the fundamental importance of economic growth for the transformation of European society, the first theme had to concern industrialization. Dissatisfied with the national factor lists, some economic historians have recently begun to argue that "this process, on the whole is essentially one of regions, operating in a European context, and that in the early phases, when the foundations were being laid for the industrial transformation of society, governments were at best irrelevant ..." While this regional approach has the advantage of greater precision in the investigation of technological progress, it immediately raises the new question: Was the region merely the geographical locus of development or did it have some inherent quality of its own that fundamentally colored this process? The insight of "differential contemporaneity" (to borrow S. Pollard's somewhat cumbersome term) poses a fresh problem: Why did regions react to the same technologies or economic opportunities in such contradictory ways?(11) A regional approach also needs to incorporate the varying patterns of the transformation of agriculture as precondition for population growth or economic development. Finally, given the longstanding "immiserization" debate among economic historians, there is a need for new class-specific measurements of the impact of economic growth so that one can better judge its relative costs and benefits in particular places.

The papers presented and the subsequent discussions helped resolve some economic issues and raised others. Based on aggregate data G.L. Brabander investigated locational changes in the Belgian employment market, and observed "a shift of the point of gravity from the early industrialized Walloon provinces ... to the Flemish provinces." On a higher level of generalization J. Kahk proposed a scheme of "types and stages of agrarian development in Europe during the period of transition from Feudalism to Capitalism" in which different social relations between great landowners and tillers determined the speed and extent of the agricultural revolution. Finally in a brilliant paper R. Floud suggested substituting for national income accounts the measure of people's changing height as an indicator of their actual health and welfare, since there seems to be a direct positive association between them.(12) The ensuing lively discussion pointed out the slipperiness and arbitrariness of the concept of region, without, however, being able to suggest a better alternative. It also raised the problem of the economic returns of agricultural labor and the question of the connection between increasing food supplies and population growth. The most heated arguments, however, revolved around the validity of height as a measure of welfare and the importance of other intervening variables. On the whole Sidney Pollard's regional approach was vindicated, even though it seemed more fruitful as a way of asking questions than as a category providing conclusive answers.

A second major area of intense historical debate is the relationship between population growth and the evolution of the modern family. The general out-

lines of the demographic transition seem to be beyond dispute, even if its sequence in individual countries is still vigorously debated in terms of fertility, nuptiality and mortality. While the cliché of the shift from the extended to the nuclear family is apparently dissolving in more complex perceptions, it is not entirely clear which overarching conception will replace it, especially when tied to a specific social context such as the working class. While internal statistical explanations of demographic data seem lifeless, general cultural notions such as L. Stone's rise of "affective individualism" are hard to substantiate.<sup>(13)</sup> Yet such linkages seem vitally necessary in order to provide motivation for behavioral changes and to explore the consequences of altered demographic patterns. Finally, the connections between the population transition and changes in food supply or jobs ("niches") need to be made more explicit, so as to clarify the interaction between economic growth and the population transition.

The Bellagio presentations restated the differences between demographic and family-history approaches but pointed also to new social and cultural directions for future convergence. In a massive and authoritative paper E. A. Wrigley tackled the distinctive French pattern of population transition both on a national and on a regional level and argued that it was not just a slower version of the general European development, but that its stability resulted from an extraordinary fertility control inside marriage.<sup>(14)</sup> In contrast David Levine tried to put English population history into a socio-economic context by focussing on the working class family. While protoindustrial conditions encouraged larger families (to increase earnings), the withdrawal of women and children from the workplace in the subsequent "machinofacture" system encouraged smaller reproduction rates, thereby changing family strategies and sizes.<sup>(15)</sup> On the basis of her historical studies of the Bretagne and of Nanterre, Martine Segalen criticized the presentist notion of the "crisis of the family" from an anthropological perspective by stressing the importance and persistence of kinship patterns across demographic changes. In the vigorous discussion, J. Dupaquier raised questions about the regional validity of Wrigley's observations and about the causes behind the "self-regulation mentality", when based on the purported economic rationality of individuals. Moreover he demonstrated the impact of declining birth rates on formal kinship networks in a series of schemata, pointing to their virtual collapse.<sup>(16)</sup> Though P. Czap attacked the British working class argument as a "case of context run amuck", the debates demonstrated the utility of aggregate analysis for raising questions, the need to integrate economic and class factors into explanations and the importance of paying more attention to the cultural dimension in assessing the meaning of demographic change.

In spite of Trevelyan's definition of social history as "history with the politics left out" (1952) a third focus of the deliberations addressed the political dimension of the great change. If defined as a societal struggle for resource allocation, politics demand systematic structural analysis. One of the crucial aspects of the transition from deferential patronage politics to professional and bureaucratic interest group struggles is the transformation of the political elite. While the generalization "the political elite is at the same time a product and a vehicle of social change" has the comforting ring of generality, the exact nature of its role (especially in its economic, social and educational dimensions) needs to be explored more deeply in different constitutional systems. Given A. Mayer's thesis of the persistence of the old regime, the transfer of power from feudal estates to the bourgeoisie of property or education and finally also to some representatives of the lower orders no longer seems automatic.<sup>(17)</sup> The links between social structural change and elite position tend to be complex and ambiguous

rather than direct and mechanical, involving the mobilization of different groups as well as certain institutional thresholds. Similarly the relationship between structural elite attributes and actual elite decisions also remains elusive, since they are often the result of coalition and compromise with the political process displaying some degree and relative independence.

Spanning a somewhat larger time-period, the political papers and discussions centered mostly on Central and East European elites. Based on two early modern regional studies, J. Topolski presented the first quantitative evidence on the size of the Polish nobility (the "szlachta" was only 3 - 4% of the population, not 10% as has often been assumed) and explained the rise of the magnates with the loss of efficiency of serf labor. For the last half of the 19th century V. Liveanu investigated the impact of the changing social recruitment of Rumanian ministries from old boyars to new landowners (and a few bourgeois or professionals) on their conservative or liberal policies. Presenting the results of a massive comparative roll-call analysis and structural study of the German National Assembly of 1848, its French counterpart (1818-1849) and the British House of Commons (1841-1847), Heinrich Best found only weak support for an "interest-theoretical model" of voting (and even less so for a political socialization explanation), but argued instead in favor of regional representational influences. In the lively debate, the roll-call approach was more controversial than expected (after it has been used by political scientists and "new" political historians several decades). But G. Botz raised the more important question about the strength of the linkage between economic interest or social status and political position, since it touched on the relative autonomy of politics. Moreover the connection between the arrival of new socio-economic groups (such as professionals, working-class elites) on the political scene and political reform impulses, while suggestive, seems not unambiguous, since new arrivals could also be mobilized for the defense of the status quo. On the whole the elite session pointed to the necessity and difficulty of reintroducing a political dimension into the discussion of the transformation of European society.

Although quantification has apparently bypassed intellectual history, a final focus of the debate on "the great change" involved one of the institutional aspects of culture which is amenable to statistical analysis. More basic than the study of formalized schooling is the investigation of the dynamics of literacy. Although there remain substantial gaps in the record (especially in the early stages), there is general agreement on the rise of nominal signature literacy in the 19th century, spreading from Central Europe outward. Recent work has raised a number of important questions about the relationship between reading or writing and other socio-economic indicators such as occupation, age or religion and begun to reveal a characteristic pattern of disparities in literacy (high status more than low, men more than women, etc.). Another set of issues revolves not so much around formal minimal competency but around the cultural, social or political meaning of different levels of reading and writing. The question of what was read may turn out to be more significant than the query of whether anything was read at all. The debate about the "literacy myth" may hinge on the quality as much as on the quantity of reading or writing. Finally, it is important to ask whether literacy ought to be seen "as a consequence of the industrial revolution" or as one of the preconditions for agricultural improvement or industrial development.(18)

The literacy session revolved around the heretical question, put by W. E. Stephens: "Can quantification get us much further?" From a similar perspective H. Graaf sketched a three stage model of literacy research, beginning

with an attempt to establish gross literacy rates for different countries, moving on to an effort to define factors governing its spread in different classes, regions, etc. and culminating in a new search for the meaning of reading and writing. On the second level, G. Desert presented an impressive tableau of the rise in French literacy rates throughout the 19th century and explored both the stimulating and retarding factors of alphabetisation. Based on his impressive Tuna database E. Johansson discussed the "old reading tradition", centered on bible and hymnbook which made Swedish Lutherans literate before most Europeans of the 18th century and explained its meaning in religious rather than secular terms. On the third level E. Stevens raised the qualitative question of the differential availability of justice for literate versus illiterate people in the contractual American context and concluded that despite some protection ("fair reading") illiterates were increasingly at a disadvantage in their legal dealings. Although subsequent comments agreed with the plea for multidimensional databases (including more economic and social variables), the thrust of the comments pointed to the importance of further study of the functional meaning of literacy for the spread of nationalism, for economic development and so on. From an ethnographic perspective W. Schenda raised the intriguing question whether literacy was necessary at all, only to answer that, despite the strength of orality, higher levels of technology and civilization required it.(19)

These few sketchy remarks are not intended as a definitive summary of each of the panels, but rather as impressionistic reflections on the overall state of the debate on the great change in European society. The Bellagio discussions suggest the utility of paying more attention to several themes, cutting across national contexts as well as individual fields. One such concept is the notion of the region, not only in economic development but also in population growth, political culture or educational achievement. While it may be difficult to define and does not have a numinous soul (as posited in some of the older "Raumforschung"), region represents an interesting middle ground between national or local levels and its peculiar mixture of conditions, institutions and customs strongly conditions broader developments.(20) A second such general notion would be the family, whether as household economy, as source of patronage or as transmitter of learning. Focussing on the family as a unit of investigation would yield more intelligible results than the alternatives of high level aggregate data or of low level individual analysis, since much decision-making takes place on that plane.(21) A third overarching motive might be the ambivalent relationship between elites and change, be it economic development, reproduction patterns, political reform or the spread of education. While some progressive groups within elites tend to be trendsetters of changing patterns (entrepreneurship, limitation of family size) others play an important retarding role (like landowners opposing constitutionalism or compulsory education).(22) A final element could be the notion of schooling as it affects economic growth, family relations or political decisions.(23) While there are no simple one-to-one relationships between these four dimensions and aspects of the great change, they significantly reinforce or attenuate its speed and direction.

Although the Bellagio conference did not produce a new theory of general social change, it contributed a number of exciting insights into its component processes. For instance, the changes in height over time, across social classes and among regions came as a surprise to most participants. At the same time the tenacity of kinship relations despite dramatically altered family sizes was also a novel thesis, arousing much comment. Similarly the importance of regional representation for legislative behavior did not agree with older interest-theory or socialization approaches to political power.

Finally the existence of old-style religious literacy in early modern Sweden not only challenged some of the established chronology of alphabetisation but also raised new questions about the meaning of reading. Aside from such substantive advances, the Bellagio discussions also underlined the interconnectedness of the "great change" which can be grasped across subspecialties. They also demonstrated the international nature of the transformation of European society which in spite of differences in timing and emphasis provides an essential yardstick for measuring different national experiences. And finally they relativized internal methodological disputes among quantifiers by restoring the historical question as the common denominator of debate.

Quantitative historians came away from this international and interdisciplinary dialogue with a renewed sense of self-confidence in their enterprise, properly pursued. There was general agreement on the limits of aggregate time series analysis, since it can reveal only the most general of outlines of development. But the proposal of using height as supplement to national income accounts illustrates that even on the level of measurement, much progress, given some ingenuity, is still possible. Instead, the thrust of the comments pointed towards refining quantitative approaches, rather than abandoning them. Where the most basic statistics are missing or unreliable, even the establishment of numerical parameters is already an advance. But in more highly numerate contexts, more sophisticated theoretical conceptions (like family schemata) or elaborate statistical analyses (such as the factor modelling of legislatures) can still yield important discoveries. To this end the creation of new comprehensive and multidimensional databases (be it in geneology or literacy) must be continued. Surprisingly enough the dialogue with qualitatively oriented anthropologists was also quite fruitful, indicating complementarity rather than antagonism of methods, when focussed on a common concrete question. With a sufficient dose of self-criticism and a greater openness towards qualitative approaches, quantitative historians still have much to contribute towards elucidating the great changes of the past.(24)

## NOTES

- 1 K.H. Jarausch, "The International Dimension of Quantitative History", *Social Science History*, 2 (1984), 123 ff, a special issue devoted to "Quantitative History in International Perspective."
- 2 This conference met from May 7 to 11, 1984 at the Rockefeller Foundation Conference Center in Bellagio (Italy). Its most interesting papers are being published in this and the next issue of HSR.
- 3 J.M. Kousser, "Quantitative Social Scientific History", in M. Kammen, ed., *The Past Before Us* (Ithaca, 1980), 437-456; T.K. Rabb, "The Development of Quantification in Historical Research", *Journal of Interdisciplinary History*, 13 (1983), 591 ff; and P. Smith's introduction to the special issues on "Quantitative History and Epistemology" in *Historical Methods* (Summer 1984).
- 4 K.H. Jarausch, "(Inter)nationale Styles of Quantitative History", *Historical Methods* (Fall, 1984).
- 5 R. Fogel, "'Scientific History' and Traditional History", in L.J. Cohen, ed., *Logic, Methodology and Philosophy of Science* (Amsterdam, 1982), 6: 15-61 versus D. Herlihy, "Numerical and Formal Analysis in European History", *Journal of Interdisciplinary History*, 12 (1981), 115-136.
- 6 As an example, A. Bogue, *Clio and the Bitch Goddess* (Beverly Hills, CA, 1984).
- 7 H.-U. Wehler, *Modernisierungstheorie und Geschichte* (Göttingen, 1975).

- 8 W. Zorn, *Handbuch der Deutschen Wirtschafts- und Sozialgeschichte* (Stuttgart, 1976), vol. 2.
- 9 For instance, P. Stearns, *European Society in Upheaval: Social History Since 1750* (New York, 1975) 2nd ed; J. Gillis, *The Development of European Society 1770-1870* (Boston, 1977); and T.S. Hamerow, *The Birth of a New Europe: State and Society in the Nineteenth Century* (Chapel Hill, 1984).
- 10 A couple of influential examples are A. Gerschenkron, *Economic Backwardness in Historical Perspective* (Cambridge, MA, 1962) and B. Moore, Jr., *The Social Origins of Dictatorship and Democracy* (Boston, 1966).
- 11 S. Pollard, *Peaceful Conquest: The Industrialization of Europe, 1760-1970* (Oxford, 1981).
- 12 The papers of the economic growth and political elite sessions are in this issue while the papers of the demography and literacy panels will appear in the next issue.
- 13 L. Stone, *The Family, Sex and Marriage in England, 1500-1800* (New York, 1979) and R.W. Wall, ed., *Family Forms in Historic Europe* (Cambridge, 1983).
- 14 The full text of E.A. Wrigley's paper will appear in the first issues of the new journal *European Population Studies* in 1984-5.
- 15 D. Levine, "Unstable Population Theorizing" will appear in *Past and Present* during 1985.
- 16 J. Dupaquier also described the remarkable French genealogical reconstitution project of 3000 families which promises rich demographic, social and economic data for establishing the necessary linkages.
- 17 M. Pedesen, *Political Development and Elite Transformation in Denmark* (Beverly Hills, 1976) and A. Mayer, *The Persistence of the Old Regime* (New York 1981).
- 18 H. Graaf, *The Literacy Myth* (New York, 1979); and Hamerow, *The Birth of a New Europe*, 148.
- 19 See also W.B. Stephens, ed., *Studies in the History of Literacy* (Leeds, 1983); and W. Schenda, *Volk ohne Buch* (Frankfurt, 1970).
- 20 G. Droege et al., eds., *Landschaft und Geschichte* (Bonn, 1970).
- 21 T. Hareven, *The Family* (New York, 1978).
- 22 D. Spring, *European Landed Elites in the 19th Century* (Baltimore, 1977).
- 23 F.K. Ringer, *Education and Society in Modern Europe* (Bloomington, 1979).
- 24 The international quantitative dialogue will continue in August 1985 at the World Historical Congress in Stuttgart, where the international commission is sponsoring four sessions on the impact of quantitative methods (R. Floud), social inequality (H. Kaelble), the transition from agrarian to industrial society (V. Liveanu), and microcomputers (M. Thaller). Interested scholars should contact either the Commission or the respective panel chairman.